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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,233	11/06/2001	H. Holden Thorp	5470-107BDV3	1504
20792	7590	10/24/2003	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC			CHAKRABARTI, ARUN K	
PO BOX 37428			ART UNIT	
RALEIGH, NC 27627			PAPER NUMBER	
			1634	

DATE MAILED: 10/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/008,233

Applicant(s)

Thorp

Examiner

Arun Chakrabarti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Aug 25, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 138 and 140-142 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 138 and 140-142 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 0903 6) ☒ Other: Detailed Action

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## **DETAILED ACTION**

### ***Election/Restriction***

1. Applicant's election of Group I, corresponding to claims 138-142, in Paper No. 0903 is acknowledged. Claim 139 has been cancelled without prejudice towards further prosecution. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 138 and 140-142 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 138 recites the limitation "the same transition metal complex" in last two lines of the claim. There is insufficient antecedent basis for this limitation in the claim.

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***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 138 and 140-142 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27 of U.S. Patent No. 6,132,971 in view of claims 61, 70, and 76 of U.S. Patent No. 6,346,387.

Claims 1-27 of U.S. Patent No. 6,132,971 teaches the basic and fundamental microelectronic device of the instantly claimed invention useful for the electrochemical detection of a nucleic acid species, the device comprising:

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a microelectronic substrate having first and second opposing faces;  
plurality of conductive oxidation-reduction detection electrodes on the first face; and  
plurality of oligonucleotide capture probes immobilized on a non-conductive layer on the first face adjacent the conductive electrodes;  
with each of the different oligonucleotide capture probes positioned adjacent a different conductive electrode.

Claims 1-27 of U.S. Patent No. 6,132,971 also teach a microelectronic device further comprising a contact electrically connected to the conductive electrode.

Claims 1-27 of U.S. Patent No. 6,132,971 also teach a microelectronic device, wherein the substrate is silicon.

Claims 1-27 of U.S. Patent No. 6,132,971 also teach a microelectronic device, wherein the oligonucleotide capture probe is from 4 to 100 nucleotides in length.

Claims 1-27 of U.S. Patent No. 6,132,971 do not teach the electrical connection between the plurality of oligonucleotide probes and the oxidation-reduction detection electrodes by an aqueous solution having the same transition metal complex therein.

Claims 61, 70, and 76 of U.S. Patent No. 6,346,387 teach the electrical connection between the plurality of oligonucleotide probes and the oxidation-reduction detection electrodes by an aqueous solution having the same transition metal complex therein.

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute the electrical connection between the plurality


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of oligonucleotide probes and the oxidation-reduction detection electrodes by an aqueous solution having the same transition metal complex therein of claims 61, 70, and 76 of U.S. Patent No. 6,346,387 into the claims 1-27 of U.S. Patent No. 6,132,971, since Claims 61 and 76 of U.S. Patent No. 6,346,387 states, "contacting the electrode, the immobilized binder, and the surrogate target, if present, with a transition metal mediator that oxidizes the label in an oxidation-reduction reaction between the transition metal mediator and the label, from which label there is electron transfer to the transition metal mediator resulting in regeneration of the reduced form of the transition metal mediator as part of a catalytic cycle." An ordinary practitioner would have been motivated to combine and substitute the strategy of the electrical connection between the plurality of oligonucleotide probes and the oxidation-reduction detection electrodes by an aqueous solution having the same transition metal complex therein of claims 61, 70, and 76 of U.S. Patent No. 6,346,387 into the claims 1-27 of U.S. Patent No. 6,132,971, in order to achieve the express advantages, as noted by Claims 61 and 76 of U.S. Patent No. 6,346,387, of a novel invention, which provides the strategy of contacting the electrode, the immobilized binder, and the surrogate target, if present, with a transition metal mediator that oxidizes the label in an oxidation-reduction reaction between the transition metal mediator and the label, from which label there is electron transfer to the transition metal mediator resulting in regeneration of the reduced form of the transition metal mediator as part of a catalytic cycle..

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***Conclusion***

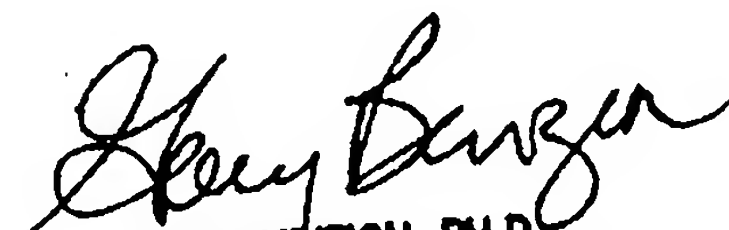
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Chakrabarti, Ph.D., whose telephone number is (703) 306-5818. The examiner can normally be reached on 7:00 AM-4:30 PM from Monday to Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (703) 308-1119. The fax phone number for this Group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group LIE Chantae Dessau whose telephone number is (703) 605-1237.

  
**ARUNK. CHAKRABARTI**  
**PATENT EXAMINER**

Arun Chakrabarti,

Patent Examiner,

October 8, 2003

  
**GARY BENZION, PH.D.**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1800**